Martha Kim

Columbia University
Department of Computer Science
500 West 120th Street, Room 450
New York, NY 10027

Phone: (212) 939-7094
Fax: (646) 775-6023
Email: martha@cs.columbia.edu
Web: http://www.cs.columbia.edu/~martha

Research Interests

Computer architecture; energy-efficient computing; parallel programming

Education

Doctor of Philosophy, Computer Science and Engineering — 12/2008
University of Washington
Thesis: Brick and Mortar Chip Fabrication
Sponsor: Prof. Mark Oskin

Master of Science, Computer Science and Engineering — 3/2005
University of Washington

Master of Engineering, Embedded Systems Design — 7/2003
Universita della Svizzera Italiana

Bachelor of Arts, Computer Science — 6/2002
Harvard University

Employment

Visiting Faculty Researcher, Google	9/2018 - present
Associate Professor (with tenure), Columbia University	1/2017 - present
Associate Professor (untenured), Columbia University	1/2015 - 12/2016
Assistant Professor, Columbia University	1/2009 - 12/2014
Graduate Research Assistant, University of Washington	9/2003 - 9/2008
Research Intern, Intel Corporation	6/2006 - 9/2006
Research Intern, IBM T.J. Watson Research Center	6/2001 - 8/2002
Undergraduate Research Assistant, Harvard University	7/2000 - 6/2002

Awards and Honors

Faculty Research Award, Google	2017
Borg Early Career Award, CRA-W	2016
Edward and Carole Kim Faculty Involvement Award, Columbia Engineering	2015
Top Picks in Computer Architecture, IEEE Micro	2013, 2014, 2015
Rodriguez Junior Faculty Award, Columbia Engineering	2013
CAREER Award, National Science Foundation	2013
Anita Borg Memorial Scholarship, Google	2007
Ph.D. Fellowship, Intel Corporation	2005 - 2007
Derek Bok Award, Harvard University	2000, 2001

Publications

Prior to 2009 I published using my maiden name, Mercaldi. Student and postdoc authors supervised by me are also underlined. Computer Architecture traditionally lists student authors followed by faculty authors. Lead students and faculty come first in their respective lists, which revert to alphabetical when contributions are more or less equal. The publications below are listed by type in reverse chronological order.

Journal Articles

1. Joao P. Cerqueira, Thomas J. Repetti, Yu Pu, Shivam Priyadarshi, Martha A. Kim, Mingoo Seok. "Catena: A 0.5-V Sub-0.4-mW 16-Core Spatial Array Accelerator for Mobile and Embedded Computing" . In *IEEE Transactions on VLSI Systems (TVLSI)*, June 2019.

2. Stephen A. Edwards, Richard Townsend, Martha Barker, Martha A. Kim. Compositional Dataflow Circuits. In *Transactions on Embedded Computing Systems (TECS)*, January 2019.

3. Lisa Wu, Andrea Lottarini, Tim Paine, Martha A. Kim, Kenneth A. Ross. The Q100 Database Processing Unit. In *IEEE Micro Top Picks in Computer Architecture (TopPicks)*, May 2015.

4. Lisa Wu, Orestis Polychroniou, Raymond J. Barker, Martha A. Kim, Kenneth A. Ross. Energy Analysis of Hardware and Software Range Partitioning. In *ACM Transactions on Computer Systems (TOCS)*, August 2014.

5. Van Bui, Martha A. Kim. "Caches and Codecs: An Analytical Model for the Storage and Manipulation of Data" . In *IEEE Micro: Special Issue on Big Data (IEEEMicro)*, July 2014.

6. Lisa Wu, Raymond J. Barker, Martha A. Kim, Kenneth A. Ross. Hardware Partitioning for Big Data Analytics. In *IEEE Micro Top Picks in Computer Architecture (TopPicks)*, May 2014.

7. Melanie Kambadur, Kui Tang, Martha A. Kim. Collection, Analysis, and Uses of Parallel Block Vectors. In *IEEE Micro Top Picks in Computer Architecture (TopPicks)*, May 2013.

8. Lisa Wu, Martha A. Kim, Stephen A. Edwards. Cache Impacts of Datatype Acceleration. In *Computer Architecture Letters (CAL)*, January 2012. **Best of CAL 2011; CAL Spotlight Paper.**

9. Steven Swanson, Andrew Schwerin, Martha Mercaldi, Andrew Petersen, Andrew Putnam, Kenneth Michelson, Mark Oskin, Susan J. Eggers. The WaveScalar Architecture. In *ACM Transactions on Computer Systems (TOCS)*, May 2007.

Refereed Conference Proceedings

10. Andrea Lottarini, Joao P. Cerqueira, Thomas J. Repetti, Stephen A. Edwards, Kenneth A. Ross, Mingoo Seok, Martha A. Kim. "Master of None Acceleration: A Comparison of Accelerator Architectures for Analytical Query Processing" . In *International Symposium on Computer Architecture (ISCA)*, June 2019. *Accept rate: 17%.*

11. Andrea Lottarini, Alex Ramirez, Joel Coburn, Martha A. Kim, Parthasarathy Ranganathan, Daniel Stodolsky, Mark Wachsler. vbench: Benchmarking Video Transcoding in the Cloud. In *Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, March 2018. *Accept rate: 18%.*

12. Thomas J. Repetti, Joao P. Cerqueira, Martha A. Kim, Mingoo Seok. Pipelining a Triggered Processing Element. In *International Symposium on Microarchitecture (MICRO)*, October 2017. *Accept rate: 19%.*

13. Stephen A. Edwards, Richard Townsend, Martha A. Kim. Compositional Dataflow Circuits. In *ACM-IEEE International Conference on Formal Methods and Models for System Design (MEMOCODE)*, October 2017. *Accept rate: 24%.*

14. Pavan Kumar Chundi, Yini Zhou, Martha A. Kim, Eren Kursun, Mingoo Seok. "Hotspot Monitoring and Temperature Estimation with Miniature On-Chip Temperature Sensors" . In *International Symposium on Low Power Electronics and Design (ISLPED)*, July 2017. *Accept rate: 25%.*

15. Andrea Lottarini, Stephen A. Edwards, Kenneth A. Ross, Martha A. Kim. Network Synthesis for Database Processing Units. In *Design Automation Conference (DAC)*, June 2017. *Accept rate: 24%.*

16. Richard Townsend, Martha A. Kim, Stephen A. Edwards. From Functional Programs to Pipelined Dataflow Circuits. In *International Conference on Compiler Construction (CC)*, February 2017. *Accept rate: 24%.*

17. Melanie Kambadur, Martha A. Kim. "NRG-Loops: Conditionally Adjusting Applications to Conserve Power and Energy" . In *International Symposium on Code Generation and Optimization (CGO)*, March 2016. *Accept rate: 23%.*

18. Kuangya Zhai, Richard Townsend, Lianne Lairmore, Martha A. Kim, Stephen A. Edwards. Hardware Synthesis from a Recursive Functional Language. In *International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS)*, October 2015. *Accept rate: 26%.*

19. Melanie Kambadur, Sunpyo Hong, Juan Cabral, Harish Patil, Chi-Keung Luk, Sohaib Sajid, Martha A. Kim. Fast Computational GPU Design with GT-Pin. In *International Symposium on Workload Characterization (IISWC)*, October 2015. *Accept rate: 33%.*

20. Bingyi Cao, Kenneth A. Ross, Martha A. Kim, Stephen A. Edwards. Implementing Latency-Insensitive Dataflow Blocks. In *ACM-IEEE International Conference on Formal Methods and Models for System Design (MEMOCODE)*, September 2015. *Accept rate: 44%.*

21. Melanie Kambadur, Martha A. Kim. An Experimental Survey of Energy Management Across the Stack. In *International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA)*, October 2014. *Accept rate: 28%.*

22. Lisa Wu, Andrea Lottarini, Tim Paine, Martha A. Kim, Kenneth A. Ross. Q100: The Architecture and Design of a Database Processing Unit. In *Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, March 2014. **Top Picks in Computer Architecture Selection.** *Accept rate: 23%.*

23. Melanie Kambadur, Kui Tang, Martha A. Kim. "ParaShares: Finding the Important Basic Blocks in Multithreaded Programs" . In *International European Conference on Parallel Processing (Euro-Par)*, February 2014. *Accept rate: 25%.*

24. Lisa Wu, Raymond J. Barker, Martha A. Kim, Kenneth A. Ross. "Navigating Big Data with High-Throughput, Energy-Efficient Data Partitioning" . In *International Symposium on Computer Architecture (ISCA)*, June 2013. **Top Picks in Computer Architecture Selection.** *Accept rate: 19%.*

25. Melanie Kambadur, Kui Tang, Martha A. Kim. Harmony: Collection and Analysis of Parallel Block Vectors. In *International Symposium on Computer Architecture (ISCA)*, June 2012. **Top Picks in Computer Architecture Selection.** *Accept rate: 17%.*

26. Melanie Kambadur, Tipp Moseley, Rick Hank, Martha A. Kim. Measuring Interference Between Live Datacenter Applications. In *International Conference on Supercomputing (SC)*, May 2012. *Accept rate: 21%.*

27. Martha Mercaldi Kim, John D. Davis, Mark Oskin, Todd Austin. Polymorphic On-Chip Networks. In *International Symposium on Computer Architecture (ISCA)*, June 2008. *Accept rate: 14%.*

28. Martha Mercaldi Kim, Mojtaba Mehrara, Mark Oskin, Todd Austin. "Architectural Implications of Brick and Mortar Silicon Manufacturing" . In *International Symposium on Computer Architecture (ISCA)*, June 2007. *Accept rate: 23%.*

29. Martha Mercaldi, Steven Swanson, Andrew Petersen, Andrew Putnam, Andrew Schwerin, Mark Oskin, Susan J. Eggers. Instruction Scheduling for a Tiled Dataflow Architecture. In *Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, October 2006. *Accept rate: 22%.*

30. Andrew Petersen, Andrew Putnam, Martha Mercaldi, Andrew Schwerin, Steven Swanson, Susan J. Eggers, Mark Oskin. Reducing Control Overhead in Dataflow Architectures. In *Conference on Parallel Architectures and Compilation Techniques (PACT)*, September 2006. *Accept rate: 26%.*

31. Martha Mercaldi, Steven Swanson, Andrew Petersen, Andrew Putnam, Andrew Schwerin, Mark Oskin, Susan J. Eggers. Modeling Instruction Placement on a Spatial Architecture. In *Annual ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)*, July 2006. *Accept rate: 43%.*

32. Steven Swanson, Andrew Putnam, Martha Mercaldi, Andrew Petersen, Andrew Schwerin, Mark Oskin, Susan J. Eggers. Area-Performance Trade-offs in Tiled Dataflow Architectures. In *International Symposium on Computer Architecture (ISCA)*, June 2006. *Accept rate: 14%.*

33. Margaret G. Kostoulas, Morris Matsa, Noah Mendelsohn, Eric Perkins, Abraham Heifets, Martha Mercaldi. "XML Screamer: An Integrated Approach to High Performance XML Parsing, Validation and Deserialization" . In *International Conference on World Wide Web (WWW)*, June 2006. **Best Paper Nominee.** *Accept rate: 11%.*

Refereed Workshops

21. Bingyi Cao, Kenneth A. Ross, Stephen A. Edwards, Martha A. Kim. "Deadlock-Free Joins in DB-Mesh, an Asynchronous Systolic Array Accelerator" . In *Workshop on Data Management on New Hardware (DaMoN)*, May 2017.

22. Paolo Mantovani, Emilio G. Cota, Seongjong Kim, Kevin Tien, Johnnie Chan, Giuseppe Di Guglielmo, Christian Pilato, Martha A. Kim, Mingoo Seok, Kenneth Shepard, Luca P. Carloni. Benchmarking Methodology for Embedded Scalable Platforms. In *DAC Suite of Embedded Applications and Kernels Workshop (SEAK)*, April 2014.

23. Richard Townsend, Martha A. Kim, Stephen A. Edwards. Resource Allocation for Hardware Implementations of Map. In *Workshop on Architectures and Systems for Big Data (ASBD)*, April 2014.

24. Melanie Kambadur, Martha A. Kim. Trading Functionality for Power within Applications. In *SIGPLAN Workshop on Probabilistic and Approximate Computing (APPROX)*, March 2014.

25. Lisa Wu, Martha A. Kim. Acceleration Targets: A Study of Popular Benchmark Suites. In *Dark Silicon Workshop (DaSi)*, April 2012.

26. Martha A. Kim. Stories, not Words: Abstract Datatype Processors. In *Workshop on New Directions in Computer Architecture (NDCA)*, June 2011. **Invited submission to CAL.**

27. Martha A. Kim, Stephen A. Edwards. "Computation vs. Memory Systems: Pinning Down Accelerator Bottlenecks" . In *Workshop on Architectural and Microarchitectural Support for Binary Translation (AMAS-BT)*, June 2010.

Refereed Posters

28. Melanie Kambadur, Kui Tang, Joshua Lopez, Martha A. Kim. Parallel Scaling Properties from a Basic Block View. In *ACM SIGMETRICS (Poster)*, November 2012.

Position Papers, Meeting Reports, and Miscellaneous Publications

35. Martha A. Kim. Better Architecture. In *MIT Technology Review (TR)*, April 2015.

36. Mark Oskin, Josep Torrelas, Et. al.. "Laying a New Foundation for IT: Computer Architecture for 2025 and Beyond" . In *Workshop on Advancing Computer Architecture Research (ACAR-II)*, September 2010.

Software and Dataset Releases

41. vbench Video Transcoding Benchmark, 3/2018
    http://www.vbench.net
42. Columbia TIA Infrastructure, 10/2017
    https://github.com/arcade-lab/tia-infrastructure
43. Microarchitectural Phase Tracking Tool, 5/2017
    https://github.com/arcade-lab/uarch-phases
44. An Experimental Survey of Energy Management Dataset, 10/2014
    http://arcade.cs.columbia.edu/energy-study
45. Harmony Software Download, 6/2012
    http://arcade.cs.columbia.edu/harmony

Invited Talks

"The Search for Energy Efficiency: From Hardware to Software And Back" *IBM T.J. Watson*, 7/2017
"The Search for Energy Efficiency: From Hardware to Software And Back"
SRC Executive Technology Advisory Board, 6/2017
"The Search for Energy Efficiency: From Hardware to Software And Back" *Duke*, 11/2016
"The Search for Energy Efficiency: From Hardware to Software And Back" *Tufts*, 10/2016
"The Search for Energy Efficiency: From Hardware to Software And Back"
Judith Resnik Year of Women in ECE Seminar at CMU, 9/2016
Specialization for Data Analytics *Microsoft Research Faculty Summit*, 7/2014
The Design of a Database Processing Unit *IBM T.J. Watson*, 3/2014
The Design of a Database Processing Unit *Oracle Labs*, 2/2014
The Design of a Database Processing Unit *CMU*, 2/2014
The Design of a Database Processing Unit *Stanford*, 1/2014
The Design and Implementation of a Database Processing Unit *EPFL*, 12/2013
The Design and Implementation of a Database Processing Unit *Wisconsin*, 10/2013
"Navigating Big Data with High-Throughput, Energy-Efficient Data Partitioning" *Google*, 4/2013
"Navigating Big Data with High-Throughput, Energy-Efficient Data Partitioning" *Rutgers*, 3/2013
Towards Efficient, Adaptive Hardware Systems *IBM*, 1/2010
Attracting Students via a Freshman Seminar *Workshop on Computer Architecture Education*, 6/2008
Instruction Scheduling for Wavescalar *Cornell*, 4/2007
Instruction Scheduling for Wavescalar *Princeton*, 8/2006
Instruction Scheduling for Wavescalar *MIT*, 8/2006
Instruction Scheduling for Wavescalar *Harvard*, 8/2006
Instruction Scheduling for Wavescalar *Intel*, 7/2006

Outreach

Organizer

Beyond Your Technical Skills: What Makes A Successful Researcher *Grace Hopper Celebration*, 9/2010

Moderator

Computer Science and Software Engineering Panel *Code Like a Girl at The Dalton School*, 4/2016

Speaker

Rising Stars in EECS Workshop	*MIT*, 10/2018
CRA Career Mentoring Workshop	*Washington DC*, 2/2018
CRA-W Grad Cohort Workshop	*Washington DC*, 4/2017
Faculty Round Table	*Columbia Engineering: Engineering Women's Forum*, 10/2016
CRA Early Career Mentoring Workshop	*Washington DC*, 2/2016
Future Directions of University Learning	*VMware Academic Research Symposium*, 7/2013
Women in Science	*Scientista/Project Rousseau at Barnard College*, 4/2013
Women in Science and Engineering Conference	*Columbia University*, 10/2011
CRA-W/CDC PL, OS, and Architecture Workshop	*Washington DC*, 3/2009

Other

Bit by Bit Conference	*Advisory Board Member*, 4/2017	present
The Artemis Project	*Faculty Mentor*, 5/2013	8/2013
STEM Working Group	*Member*, 4/2010	7/2012
Collaborative Research for Undergraduates (CREU)	*Mentor*, 9/2010	5/2011
Women, Computing, and Collaborating	*Instructor*, 9/2005	3/2006

Patents

Data Reporting Application Programming Interfaces in an XML Parser Generation For XML Validation and Deserialization 5/2012
#8,171,395

Customized silicon chips produced using dynamically configurable polymorphic network 10/2009
#7,598,766

Building a WaveCache 2/2009
#7,490,218

Grants and Gifts

Qualcomm Faculty Award 2018: 2019
Principal Investigator

Google Faculty Award 2017: 2017
Video Transcoding Infrastructure for Video Sharing
Principal Investigator

C-FAR: 2015 – 2016
Hardware-Software Codesign for Efficient Big Data Analytics
Principal Investigator

Intel: 2015
Heterogenous Accelerators Research Platform (HARP) Program
Principal Investigator

Intel: 2015 – 2015
Database Acceleration Exploration using FPGAs
Principal Investigator

C-FAR: 2014 – 2015
Programmable Accelerators for Big Data Analytics
Principal Investigator

National Science Foundation, CCF-1253772: 2013 – 2018
CAREER: Abstractions for Energy Management: Vision, Architecture and Tools
Principal Investigator

DARPA: 2013 2017
"ESP: Embedded Scalable Platforms for Terascale Energy-Efficient Computing"
Co-Principal Investigator

National Science Foundation, CCF-1162124: 2012 – 2018
SHF: Medium: Compiling Parallel Algorithms to Memory Systems
Co-Principal Investigator

National Science Foundation, CCF-1065338: 2011 – 2017
SHF: Medium: Type-Specific Instruction Processing
Principal Investigator

National Science Foundation, CNS-1117135: 2011 – 2013
CSR: Small: Fluid Communication for Parallel Programs
Principal Investigator

Teaching

Course and instructor ratings are out of 5.00.

COMS 6998: FPGAs Then and Now

Enrollment: 12 Spring 2018

CSEE 3827: Fundamentals of Computer Systems

Enrollment: 189 Fall 2017
Enrollment: 179 Fall 2016
Enrollment: 162 Spring 2016
Enrollment: 178 Fall 2015
Enrollment: 136 Fall 2014
Enrollment: 104 Fall 2013
Enrollment: 74 Fall 2012
Enrollment: 114 Spring 2012
Enrollment: 78 Spring 2011
Enrollment: 74 Spring 2010
Enrollment: 86 Spring 2009

COMS 4130: Principles and Practice of Parallel Programming

Enrollment: 32 Fall 2013
Enrollment: 22 Fall 2012
Enrollment: 36 Fall 2011

CSEE 4824: Computer Architecture

Enrollment: 71 — Spring 2017

COMS 4995: Principles and Practice of Parallel Programming

Enrollment: 16 — Fall 2010
Enrollment: 18 — Fall 2009

ENGI 1002: Egleston Scholars Research Seminar

Enrollment: 14 — Fall 2017
Enrollment: 20 — Fall 2016

Doctoral Graduates

Andrea Lottarini, *Software Engineer at Google* — 9/2012 – 1/2019
Melanie Kambadur, *at Oscar Health* — 9/2010 – 1/2016
Lisa Wu, *postdoc at UC Berkeley* — 9/2010 – 5/2014

Current Doctoral Students

Martha Barker — 9/2017 – present
Thomas Repetti — 9/2015 – present

Additional Doctoral Committees

Thesis Committee

Emilio Cota, *Computer Science* — 3/2019
Andrea Lottarini, *Computer Science* — 1/2019
Yipeng Huang, *Computer Science* — 2/2018
Jiangyi Li, *Electrical Engineering* — 2/2018
Orestis Polychroniou, *Computer Science* — 9/2017
Paolo Mantovani, *Computer Science* — 5/2017
Youngjin Yoon, *Computer Science* — 2/2017
Joshua Kim, *Electrical Engineering* — 12/2016
Melanie Kambadur, *Computer Science* — 1/2016
Binh Pham, *Computer Science (Rutgers University)* — 11/2015
Kagan Irez, *Electrical Engineering* — 9/2014
Lisa Wu, *Computer Science* — 3/2014
Richard Neill, *Computer Science* — 5/2013
Gilbert Hendry, *Electrical Engineering* — 4/2011
Nalini Vasudevan, *Computer Science* — 1/2011
Rebecca Collins, *Computer Science* — 11/2010
Melinda-agyekum, *Computer Science* — 10/2010
Cheng-Hong Li, *Computer Science* — 9/2009
Peggy McGee, *Computer Science* — 8/2009

Proposal Committee

Andrea Lottarini, *Computer Science* — 12/2017
Richard Townsend, *Computer Science* — 9/2017

Jiangyi Li, *Electrical Engineering* 4/2017
Yipeng Huang, *Computer Science* 12/2016
Paolo Mantovani, *Computer Science* 3/2016
Emilio Cota, *Computer Science* 2/2016
Younghoon Jung, *Computer Science* 3/2015
Melanie Kambadur, *Computer Science* 11/2014
Lisa Wu, *Computer Science* 2/2013
Youngjin Yoon, *Computer Science* 12/2012
Richard Neill, *Computer Science* 4/2010
Rebecca Collins, *Computer Science* 11/2009

Candidacy Committee

Thomas Repetti, *Computer Science* 1/2019
Bingyi Cao, *Computer Science* 12/2016
Andrea Lottarini, *Computer Science* 3/2016
Yipeng Huang, *Computer Science* 4/2015
Paolo Mantovani, *Computer Science* 8/2014
Melanie Kambadur, *Computer Science* 2/2013
Lisa Wu, *Computer Science* 1/2012
Sungjun Kim, *Computer Science* 12/2010
Baolin Shao, *Computer Science* 12/2010
Youngjin Yoon, *Computer Science* 4/2010
Richard Neill, *Computer Science* 5/2009

Masters Student Supervision

Tyrus Cukavac, *Computer Science* 1/2017 – 12/2016
Eashwar Rangarajan, *Computer Engineering* 1/2016 – 12/2016
Hao Jin, *Electrical Engineering* 9/2014 – 12/2014
Fang Fang, *Electrical Engineering* 9/2014 – 12/2014
Yifan Fu, *Computer Engineering* 1/2014 – 5/2014
David Dh Arthur, *Computer Engineering* 6/2013 – 12/2013
Thomas Ramps, *Computer Engineering* 9/2011 – 12/2011
Pranay Dharmale, *Computer Science* 1/2010 – 8/2010
Smrithi Ravi, *Computer Science* 1/2010 – 5/2010
Shilpa Miryala, *Computer Science* 1/2010 – 5/2010
Karthik Srivatsa, *Computer Science* 1/2010 – 5/2010
Vinay Sharma, *Computer Engineering* 1/2010 – 5/2010
Ankita Nayak, *Computer Engineering* 1/2010 – 5/2010
Harsh Parekh, *Computer Engineering* 5/2009 – 8/2009
Roopa Kakarlapudi, *Computer Engineering* 5/2009 – 8/2009
Ramachandran Shankar, *Computer Engineering* 1/2009 – 5/2009

Undergraduate Student Supervision

Lancelot Wathieu, *Computer Engineering* 1/2018 – 8/2018
Sammy Tbeile, *Computer Engineering* 6/2017 – 12/2017
Vinay Mehta, *Computer Engineering* 1/2017 – 8/2017
Kaitlin Huben, *Computer Science* 9/2014 – 5/2015
Yunsung Kim, *Computer Science* 9/2012 – 12/2014

Tim Paine, *Computer Engineering* $\star^{ASPLOS\ 2014\ +\ Top\ Picks}$	6/2012 – 12/2014
Whitney Bailey, *Computer Science*	1/2014 – 5/2014
Kui Tang, *Computer Science* $\star^{ISCA\ 2012\ +\ Top\ Picks}$	1/2011 – 1/2014
Joshua Lopez, *Computer Science* $\star^{SIGMETRICS\ Poster\ 2013}$	1/2012 – 9/2012
Raymond J. Barker, *Computer Engineering* $\star^{ISCA\ 2013\ +\ Top\ Picks}$	6/2010 – 6/2012
Alexander Golec, *Computer Science*	1/2012 – 5/2012
Brian Wu, *Computer Science*	1/2012 – 5/2012
Andrew Mercer-Taylor, *Computer Science*	1/2012 – 5/2012
Monica Ramirez, *Computer Science*	9/2010 – 5/2011
Elba Garza, *Computer Science*	9/2010 – 5/2011
Vladimir Shtokman, *Computer Science*	9/2009 – 1/2011
Moses Nakamura, *Computer Science*	6/2010 – 12/2010
Daniel Federman, *Computer Science*	1/2010 – 5/2010
Richard Sampson, *Computer Engineering*	9/2009 – 5/2010

Professional Service

IEEE TCCA Young Computer Architect Award, *Committee Member*		2018
IEEE TCCA Young Computer Architect Award, *Committee Chair*		2019
IEEE Technical Committee on Computer Architecture, *Executive Committee Member and Newsletter Chair*		5/2017 – 11/2018
IEEE Micro, *Guest Editor*		2018
ACM Doctoral Dissertation Award, *Chair, Award Committee*		2018
ACM Doctoral Dissertation Award, *Deputy Chair, Award Committee*		2017
ACM Doctoral Dissertation Award, *Award Committee Member*		2016
Computer Architecture Letters, *Associate Editor*	5/2016	present
ACM Transactions on Architecture and Code Optimization, *Associate Editor*	6/2017	present
2016 International Symposium on Workload Characterization, *Program Committee Co-Chair*		2016

Conference Service

International Symposium on Microarchitecture (MICRO), *Finance Co-Chair*	2018
International Symposium on Computer Architecture (ISCA), *Tutorial Chair*	2016
International Conference on Network and Parallel Computing (NPC), *Local Arrangements Co-Chair*	2015
International Symposium on Computer Architecture (ISCA), *Tutorial Co-Chair*	2014
International Symposium on Code Generation and Optimization (CGO), *Publicity Chair*	2014
International Symposium on Computer Architecture (ISCA), *Student Travel Grant Chair*	2009
Architectural Support for Programming Languages and Operating Systems (ASPLOS), *Student Volunteer Chair*	2008

Program Committee Member

International Symposium on Computer Architecture (ISCA)	2018, 2017, 2014, 2010
Architectural Support for Programming Languages and Operating Systems (ASPLOS)	2020, 2018, 2017, 2014
IEEE Micro Top Picks in Computer Architecture (TopPicks)	2018, 2016, 2015
International Symposium on High-Performance Computer Architecture (HPCA)	2016, 2012
International Symposium on Code Generation and Optimization (CGO)	2013, 2009
Conference on Programming Language Design and Implementation (PLDI)	2016
Workshop on Approximate Computing Across the Stack (WAX)	2015
International Symposium on Microarchitecture (MICRO)	2009
International Conference on Supercomputing (SC)	2010

International Symposium on Workload Characterization (IISWC)	2013
IEEE International Conference on Computer Design (ICCD)	2011
European Conference on High Performance and Embedded Architecture and Compilation (HIPEAC)	2013
Workshop on Irregular Applications: Architectures and Algorithms (IA3)	2014
X10 Workshop (X10)	2013
USENIX Workshop on Hot Topics in Parallelism (HotPar)	2013
Dark Silicon Workshop (DaSi)	2012
Workshop on Design, Architecture and Simulation of Chip Multi-Processors (dasCMP)	2014

External Review Committee Member

International Symposium on Microarchitecture (MICRO)	2017, 2016, 2015, 2014
Architectural Support for Programming Languages and Operating Systems (ASPLOS)	2015, 2012
International Symposium on High-Performance Computer Architecture (HPCA)	2015
Programming Language Design and Implementation (PLDI)	2012

Panelist

National Science Foundation	1/2014, 4/2012, 1/2012, 11/2010, 3/2010, 3/2009

School and University Service

Egleston Scholars Program, *Faculty Mentor*	4/2010 – 8/2018
Artemis Project, *Faculty Mentor*	4/2013 8/2013

Departmental Service

Barnard College Computer Science Majors, *Advisor*	5/2016 – 8/2018
Computer Engineering BS Program, *Advisor*	1/2009 – 6/2018
Computer Engineering MS Program, *Advisor*	1/2009 – 6/2018
PhD Recruiting Committee, *Member*	9/2016 – 6/2018
Visibility Committee, *Chair*	9/2017 – 6/2018
PhD Admissions Committee, *Member*	9/2016 – 6/2018
Computer Engineering MS Admissions Committee, *Member*	3/2009 6/2018
Department of Computer Science, *Interim Vice Chair*	7/2017 12/2017
Columbia College Computer Science Majors, *Advisor*	3/2014 5/2016
PhD Recruiting Committee, *Chair*	9/2010 8/2014
Faculty Recruiting Committee, *Member*	9/2012 8/2013
PhD Recruiting Committee, *Member*	9/2009 8/2010

Last updated: April 12, 2019